

**For each question, you need to find the answer and show your work. Each problem is worth 3 points: one for the correct answer and two for showing your work. For some problems, you may just need to write out how you know you have the correct answer.**

1. A triangular prism has a height of 25 cm. The triangular base has a base of 10 cm and a height of 5 cm. Find the volume of the triangular prism.
  
  
  
  
  
  
  
  
  
  
2. Find the volume of a cylinder that has a radius of 5 cm and a height of 11 cm.
  
  
  
  
  
  
  
  
  
  
3. A rectangular prism has a volume of  $64 \text{ in}^3$ . Give two sets of possible dimensions for the prism.
  
  
  
  
  
  
  
  
  
  
4. The surface area of a cube is  $24 \text{ cm}^2$ . What is the volume of the cube?
  
  
  
  
  
  
  
  
  
  
5. A rectangular prism has the following dimensions: length = 15 ft, width = 11 ft, and height = 9 ft. If only the length is tripled, by how many times is the volume increased?

6. If the length of an edge of a cube is increased by a factor of 4, what would be the effect on its volume?

7. The diameter of a tennis ball is 68 mm. Find the volume of the tennis ball to the nearest tenth.

8. The lid of a saucepan has the shape of a hemisphere (half of a sphere). The diameter of the lid is 12 inches. If the lid is placed upside-down, how much water could it hold? Round to the nearest cubic inch.

**Open-Ended Question: Answer the following question on a separate piece of paper. Make sure as you answer the open-ended question that you show your work AND explain how you know you are doing the correct work. YOU MUST EXPLAIN WHAT YOU ARE DOING!!!**

A cylinder has a base with a radius of 120 mm and a height of 300 mm.

A. Find the volume of the cylinder.

B. If the length of the radius is doubled but the height does not change, what is the effect on the volume.

C. What change could be made so that the volume of the cylinder is exactly doubled?